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ABSTRACT

In this research, some alternative high schools were evaluated in terms of both students' perceptions of classroom environment and teachers' perceptions of school environment. A sample of 742 students in 62 classes in alternative and conventional schools responded to the College and University Classroom Environment Inventory's seven scales (Personalization, Involvement, Student Cohesiveness, Satisfaction, Task Orientation, Innovation and Individualization), whereas a sample 106 alternative school teachers and 34 control teachers responded to eight scales (Affiliation, Professional Interest, Achievement Orientation, Formalization, Centralization, Innovativeness, Resource Adequacy and Work Pressure in a modified version of the School-Level Environment Questionnaire. Generally analyses of data based on both student perceptions of classroom environment and teacher perceptions of school environment suggested that the alternative high schools had been successful in fostering an environment or ethos which was more favourable than that prevalent in regular high schools. A copy of the questionnaire used in the study and a five-page list of references are attached. (Author/JAZ)

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USE OF CLASSROOM AND SCHOOL ENVIRONMENT SCALES IN EVALUATING ALTERNATIVE HIGH SCHOOLS

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ABSTRACT

Educational evaluations often emphasize achievement criteria at the expense of equally important psychosocial aspects of educational environments. In this research, some alternative high schools were evaluated in terms of both students' perceptions of classroom environment and teachers' perceptions of school environment. A sample of 742 students in 62 classes in alternative and conventional schools responded to the College and University Classroom Environment Inventory's seven scales (Personalization, Involvement, Student Cohesiveness, Satisfaction, Task Orientation, Innovation and Individualization), whereas a sample 106 alternative school teachers and 34 control teachers responded to eight scales (Affiliation, Professional Interest, Achievement Orientation, Formalization, Centralization, Innovativeness, Resource Adequacy and Work Pressure in a modified version of the School-Level Environment Questionnaire. Generally analyses of data based on both student perceptions of classroom environment and teacher perceptions of school environment suggested that the alternative high schools had been successful in fostering an environment or ethos which was more favourable than that prevalent in regular high schools.

In evaluations of educational innovations and curricula, typically standard achievement criteria have been overemphasized at the expense of equally important process criteria. For this reason, Walberg (1975) and Fraser (1981a) have urged educators more often to incorporate classroom and school environment dimensions into their evaluations so that the efficacy of educational provisions can be judged in part in terms of their effects on psychosocial aspects of classrooms and schools. The value of classroom environment dimensions as evaluative criteria is well illustrated in Welch and Walberg's (1972) and Fraser's (1979) evaluations of new science curricula which revealed sizeable and meaningful differences in the classroom environments associated with alternative curricula when a range of cognitive outcome measures showed negligible differences. Examples of other evaluation studies which have involved school environment measures are DePiano (1980) and McClure, Pratola, Ellis, Fitzritson, McCammon and Felder (1980), while evaluations involving classroom environment criteria include Cort (1979), Evans and Lovell (1979), Felner, Ginter and Primavera (1982), Levin (1980), Talmage and Hart (1977) and Wang and Walberg (1985).

Of the relatively small number of evaluation studies which have involved environment criteria, only two involved teachers' perceptions of their school environment while the remainder involved students' perceptions of classroom environment. The present research is distinctive in that it is the first evaluation study to make use of both student perceptions of classroom environment and teacher perceptions of school environment within the same evaluation study.

This use of classroom and school environment measure was for the purpose of evaluating some alternative high schools (called "senior colleges") which, among other thrusts, catered for adult learners. Because part of the stated rationale for establishing these alternative high schools was to provide a school "ethos" more suited to adult students than that typically found in conventional high schools, it was important to include both classroom and school environment measures as part of the evaluation.

Discussion in this paper is organized into three main sections. In the first background section, some brief information about the nature and rationale of the alternative high schools is provided. The next section contains a report of the research involving the assessment of classroom-level environment and use of this information in evaluating the alternative high schools. In the third section, consideration is given to the use of assessments of school-level environment in the evaluation.

INFORMATION ABOUT THE ALTERNATIVE HIGH SCHOOLS

In Western Australia, there are seven years of elementary schooling (Grades 1 to 7) and five years of high school (Grades 8 to 12). But, because attendance at school is compulsory only up to the age of 16 years, the retention rate in the last years of schooling is not as high as in other OECD countries including the USA. For example, the retention rate in government-funded high schools in Western Australia in 1983 was 94 per cent in Grade 10, 60 per cent in Grade 11 and 34 per cent in Grade 12. As part of a national attempt to raise the participation rates in full secondary education, currently there are throughout Australia many

educational innovations and experiments which are aimed at changing secondary education to make it more appealing to all students.

An example of an innovation in Western Australia involving different educational provision during the latter years of schooling was the creation in 1982 of two alternative government high schools called senior colleges. The aim of these alternative high schools is to provide a different and worthwhile educational alternative for two types of students who are above the compulsory age of schooling and who do not seem to fit readily into regular schools. First, the senior colleges cater for "second chance" mature-age people who left school some years previously without finishing the full 12 years of school, but who now wish to complete their schooling either to upgrade their qualifications and skills in relation to their vocation or to prepare themselves to enter higher education. It was felt that adult learners would benefit from a different school site away from regular high schools which are populated by young adolescents and which are organized to accommodate large numbers of adolescents in their compulsory years of schooling. Second, the senior colleges provide an alternative for adolescents who do not plan to enter higher education and who do not wish to stay on at conventional high schools because of the perceived irrelevance of their typical academically-oriented curricula. These students were thought to need an alternative curriculum which would enhance basic skills and facilitate the students' transition from school to work.

In addition to having some alternative curricular offerings, it was considered of paramount importance that the senior colleges provided a school "ethos" or milieu which is fundamentally different from that of conventional high schools. In particular, it was thought that conventional high schools for adolescents would not provide an ethos which would be appropriate to the personal characteristics, needs and motivations of adult learners. Similarly, in order to cater for students disenchanted with traditional schooling, the senior colleges needed to provide a distinctive and supportive school environment (e.g., in terms of the relationships between teachers and students) which would help to overcome the students' feelings of alienation, frustration and irrelevance built up during their time in traditional schools.

The curriculum of the senior colleges provides an academic orientation for those students wishing to matriculate in preparation for entering higher education. But, in addition, the curriculum is flexible enough to offer study on a full-time, part-time or short-term basis and to provide general education courses, upgrade courses for those wishing to keep abreast in vocational areas, and transition courses for youths wishing to enter the workforce.

STUDENT PERCEPTIONS OF CLASSROOM ENVIRONMENT

Background

Numerous reviews and books during the last decade attest to the considerable interest internationally in the assessment and investigation of students' perceptions of psychological aspects of their actual and preferred classroom learning environment (Chavez, 1984; Dreesman, 1982; Fraser, 1980, 1981a, 1985, 1986a; Fraser & Walberg, 1981; Moos, 1979; Walberg, 1976, 1979). Some of the classroom environment instruments most

widely used in this research are the Learning Environment Inventory and My Class Inventory (Anderson & Walberg, 1974; Fisher & Fraser, 1981; Fraser, Anderson & Walberg, 1982), the Classroom Environment Scale (Fisher & Fraser, 1983a; Moos & Trickett, 1974; Trickett & Moos, 1973) and the Individualized Classroom Environment Questionnaire (Fraser, 1986b; Rentoul & Fraser, 1979). The approach to studying classrooms involving the use of these student perceptual measures can be compared with two other approaches, namely, direct observation (Dunkin & Biddle, 1974) and the case study approach (Stake & Easley, 1978).

The most common use of classroom environment dimensions in past research in several countries has been as independent variables in studies of the effects of classroom environment on students' cognitive and attitudinal outcomes (Haertel, Walberg & Haertel,1981; Fraser & Fisher, 1982; Hofstein, Gluzman, Ben-Zvi & Samuel, 1979; Walberg, Singh & Rasher, 1977). This research has shown consistently that student perceptions of classroom environment account for appreciable amounts of the variance in student outcomes over and above that attributable to pretest performance and general ability. The practical significance of this research is that educators might improve student learning outcomes through the creation of classroom environments found empirically to be conducive to learning.

Studies involving use of classroom environment scales as criterion variables have revealed that classroom psychosocial climate varies between different types of schools (Trickett, 1978), between coeducational and single-sex schools (Trickett, Trickett, Castro & Schaffner, 1982), between classes of different sizes (Walberg, 1969), as well as between classes differing in subject matter (Keurt, 1979), grade level (Welch, 1979) and teacher control ideology (Harty & Hassan, 1983).

Other studies have incorporated both the actual and preferred forms of classroom environment instruments within the same investigation. Moos (1979) in the USA and Fraser (1982, 1984) in Australia compared students' and teachers' perceptions of actual and preferred classroom environment and found the same two patterns of interesting findings. First, both students and teachers preferred a more positive classroom environment than they perceived as being actually present and, second, teachers tended to perceive the classroom environment more positively than did their students in the same classrooms. Whereas most past classroom environment research has concentrated on investigations of associations between student outcomes and actual classroom environment, the actual and preferred forms of scales have been used together in exploring whether students achieve better when there is a higher similarity between the actual classroom environment and that preferred by students (Fraser & Fisher, 1983a, b; Rentoul & Fraser, 1980). Use of regression surface analysis yielded support for the person-environment fit hypothesis that students achieve better in their preferred classroom environment.

In promising small-scale practical applications, teachers have used assessments of their students' perceptions of their actual and preferred classroom environment as a basis for identification and discussion of actual-preferred discrepancies, followed by a systematic attempt to improve classrooms (Fraser & Fisher, 1986; Fraser & Deer, 1983; Fraser, 1981b). This line of work is of key importance because it provides teachers with tangible methods for improving their classrooms.

Samples

The present study involved the evaluation of two alternative high schools (called "senior colleges") which cater for adult learners in Perth, Western Australia. The sample of senior college students was a larger group of 536 students in 45 classes. In addition, in order to make meaningful interpretations of the data from the senior colleges, three comparison or control samples were involved in providing classroom environment information. The first control group consisted of 87 students in 11 classes in two technical colleges which offer evening courses (e.g., English, accounting, mathematics, typing, floristry, cake decorating, communication) which adult students can attend out of personal interest. The second control group consisted of 62 students in three Grade 11 or 12 classes in a conventional high school in which adult students were enrolled but integrated into the classes containing adolescent learners. The third control group consisted of 57 students in three Grade 11 or 12 classes at a conventional high school catering for adolescents only. It was thought that a comparison of the classroom environments of senior colleges with those of these three control groups of classrooms would help considerably in trying to answer questions about how distinct the senior colleges were in terms of their ethos.

Classroom Environment Instrument

The instrument chosen for assessing students' perceptions of classroom environment in the present study was the College and University Classroom Environment Inventory (CUCEI), which is described and included in the previous paper in this symposium (Treagust & Fraser, 1986). Although the CUCEI was designed specifically for use in higher education classes, inspection of items showed that the CUCEI was well suited for assessing classroom environment of senior college classes. In addition, the CUCEI was considered a suitable instrument for use in the technical colleges providing evening courses and for use in the last two years of schooling at both the conventional high school catering for both adults and adolescents, and at the conventional high school catering only for adolescents. All 742 students in the various samples responded to both the actual form of the CUCEI (what the classroom is really like) and the preferred form of the CUCEI (what the ideal classroom would be like).

Table 1 lists the name of each of the CUCEI's seven scales and provides some validation information for both the sample of 372 students in 34 classes in Treagust and Fraser's (1986) research and the new sample of 742 students in 62 classes involved in the present research. The validity data reported in Table 1 are each scale's internal consistency (alpha coefficient) and discriminant validity (using the mean correlation of a scale with the other six scales as a convenient index).

Classroom Environment in Senior Colleges

Figure 1 depicts profiles showing differences found between the senior colleges and the three types of control schools in terms of the classroom environment dimensions assessed by the actual form of the CUCEI. In order to facilitate intepretation and provide a more parsimonious picture of the differences, Figure 1 provides a simplified plot of only the statistically significant differences between school types. The first step in the construction of this figure involved the performance of a one-way MANOVA in which the set of seven classroom environment scales constituted the dependent variables and the type of school (senior college/evening technical college/high school for adults

TABLE 1: Internal Consistency (Alpha Reliability) and Discriminant Validity (Mean Correlation with Other Six Scales) for Actual and Preferred Forms of CUCEI for Two Samples

Scale	Form	Alpha Reliability		Mean Correlation with Other Scales	
		Past sample N=372	Present sample N=742	Past sample N=372	Present sample N=742
Personalization	Actual	0.75	0.80	0.46	0.49
	Pref.	0.68	0.72	0.42	0.47
Involvement	Actual	0.70	0.70	0.47	0.47
	Pref.	o.65	0.64	0.41	0.46
Student Cohesiveness	Actual	0.90	0.84	0.45	0.23
	Pref.	0.78	0.80	0.39	0.45
Satisfaction	Actual	0.88	0.87	0.45	0.49
	Pref.	0.82	0.82	0.40	0.48
Task Orient-ation	Actual	0.75	0.70	0.38	0.40
	Pref.	0.63	0.71	0.33	0.43
Innovation	Actual	0.81	0.72	0.46	0.46
	Pref.	0.70	0.73	0.41	0.40
Individualization	Actual	0.78	0.74	0.34	0.35
	Pref.	0.67	0.73	0.32	0.30

and adoloscents/high school for adolescents only) was the independent variable. Because the multivariate test using Wilk's lambda criteria was statistically significant ($p<0.01$), the univariate ANOVA results were examined for each of the seven scales individually. As these ANOVAs revealed significant findings on all seven scales, Tukey's post hoc procedure was used to establish the statistical significance of pairwise comparisons between each school type on each climate dimension. Figure 1 represents a plot in which any non-significant differences between two school types are represented by zero differences by averaging the relevant pairs of scores.

The profiles depicted in Figure 1 reveal some clear general patterns of differences in the favourableness of the classroom environments found in the four school types. Overall the most favourable environments were evident in the evening technical colleges; the next most favourable environments were found in the senior colleges; the third most favourable environment emerged in the conventional high school catering only for adolescents; and the least favourable environment occurred in the conventional high school which integrated adults with adolescents within the same classes. The only exception to this overall trend emerged on the Student Cohesiveness dimension in that cohesiveness was higher in the conventional high schools than in either the evening technical colleges or the senior college.

Two of the profiles in Figure 1 can be considered as providing information about the ethos associated with alternative ways of catering for adult learners, namely, through the senior colleges or through integrating adults with adolescents in a conventional high school. The other two profiles can be thought of as providing a basis for a comparison of these provisions with first, the very positive classroom environment which would be expected at evening technical colleges where adult learners attend out of interest and, second, a conventional high school for adolescents only. Figure 1 suggests that catering for adult learners through senior colleges has lead to class environments which were less favourable than those of the highly positive climates found in evening technical colleges, but more favourable than those of a conventional high school for adolescents. In contrast, it appears that catering for adult learners by integrating them with adolescents in a conventional high school has led to classroom environments which were less favourable than those in a conventional high school catering exclusively for adolescents.

Figure 1 shows that, relative to the senior colleges, the evening technical colleges were perceived to have classes with significantly more Personalization, Involvement, Satisfaction, Task Orientation, Innovation and Individualization. But, relative to the conventional high school for adolescents only, the senior colleges were perceived to have classes with significantly more Involvement, less Student Cohesiveness, more Satisfaction, more Innovation and more Individualization. Also, relative to the conventional high school catering for both adults and adolescents, senior college classes were seen as having significantly more Personalization, Involvement, Satisfaction, Task Orientation, Innovation and Individualization and less Student Cohesiveness.

It is interesting to speculate further about the significant differences in classroom environment found between the senior colleges

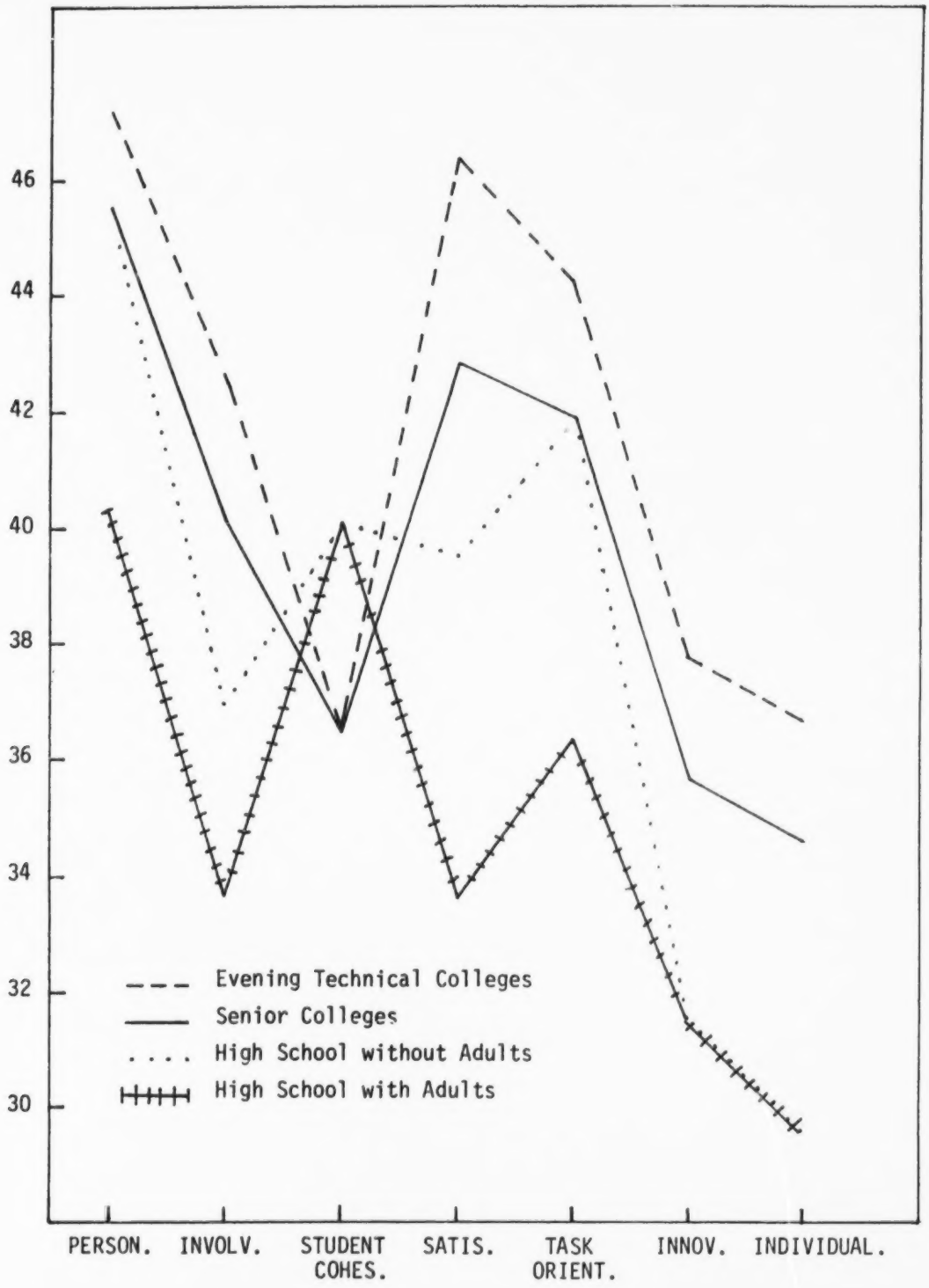

Figure 1. Classroom Environment Profiles for Four Types of Schools

and the conventional high school (i.e., in terms of greater Involvement, Satisfaction, Innovation and Individualization and less Student Cohesiveness). It appears that, by providing a separate site and a more flexible curriculum, the senior colleges have achieved classrooms which are perceived by students to have more active participation (Involvement) and to be more satisfying (Satisfaction) relative to the conventional high school. The findings for Innovation and Individualization suggests that, because of their relative newness and freedom from the structures and traditions of regular high schools, the senior colleges typically have been able to provide more innovation and variety in their classrooms (Innovation) and greater opportunity for differential treatment of students according to interests, abilities and preferences for ways of learning (Individualization) than in a conventional high school. Because many students attending the senior colleges do so on a part-time or short-term basis, it is not all that surprising that the level of perceived Student Cohesiveness was lower in the senior colleges than in the conventional high school where all students attend full-time.

Because all samples responded to both the actual and the preferred form of the CUCEI, it was possible also to examine the congruence between senior college students' perceptions of actual and preferred classroom environment. Past research suggests that it is very common for students to prefer a more favourable classroom environment that the one perceived as being actually present (Fraser, 1982, 1984; Moos, 1979). Inspection of mean CUCEI scores confirmed that, in fact, senior college students preferred a more favourable classroom environment on all seven scales in the CUCEI. Because the preferred data provide no evidence that the senior colleges were successful in promoting classroom milieus which removed the typical discrepancy between actual and preferred environments, the profile of mean preferred scores for the senior colleges is not included in Figure 1. It is noteworthy, however, that the magnitude of the actual-preferred discrepancy was considerably smaller on many of the CUCEI's dimensions for the senior colleges than for the conventional high school for adolescents. Consequently, although senior college classrooms were not perceived to be as students preferred, the preferred data still tend to corroborate the picture in Figure 1 which suggests that the senior colleges had some success in promoting more favourable classroom environments than in regular high schools.

Overall the present findings add positive support to the contention that the senior colleges provide a more favourable ethos than is likely to be present in conventional high schools. At least in terms of students' perceptions of the dimensions assessed by the CUCEI, senior college students tended to perceive their classrooms somewhat more favourably than students in conventional high schools for adolescents and much more favourably than students in conventional high schools accommodating both adults and adolescents. The next section supplements these data on students' perceptions of classroom-level environment with further information based on teachers' perceptions of school-level environment.

TEACHERS' PERCEPTIONS OF SCHOOL ENVIRONMENT

Background

Just as some researchers have devoted substantial attention to the study of classroom-level environment, so too have other researchers

completed extensive research on school-level environment (Anderson, 1982; Deer, 1980; Genn, 1984). Whereas classroom environment usually is measured in terms of students' perceptions, school environment often is assessed in terms of teachers' perceptions of their relationships with other teachers, their views of various aspects of their work milieu, etc. In contrast to classroom environment, school climate research owes much in theory, instrumentation and methodology to earlier work on organizational climate in business contexts (Anderson, 1982) and has tended to be associated with the field of educational administration and rest on the assumption that schools can be viewed as formal organizations (Thomas, 1976). Despite their simultaneous development and logical linkages, the fields of classroom-level and school-level environment have remained remarkably independent. The present research, however, breaks away from the existing tradition of independence of the two fields by including both classroom and school environment assessments within the same evaluation study.

Some of the best known research on school-level environment has been completed in higher education (i.e., has involved the institutional-level climate of universities or colleges). For example, Pace and Stern (1958) developed the College Characteristics Index (CCI) to measure student or staff perceptions of 30 environment characteristics. Each of these 30 variables was based on Murray's (1938) taxonomy and paralleled a needs scale in Stern, Stein and Bloom's (1956) Activities Index. That is, each Activities Index scale corresponded to behavioural manifestations of a needs variable, while the parallel CCI scale corresponded to environmental press conditions likely to facilitate or impede their expression. The original CCI has been adapted by Stern (1961) to form the High School Characteristics Index (HSCI), which is suitable for use at the Grade 9-12 levels. When the HSCI was administered to 947 high school students from 12 widely scattered schools in the U.S., Stern (1970) found that the following seven factors accounted for 59 percent of the variance: Intellectual Climate, Expressiveness, Group Life, Personal Dignity, Achievement Standards, Orderliness, and Practicalness. McDill and colleagues employed six scales derived from a factor analysis of items based in part on the CCI and HSCI in exploring environment-achievement relationships among a large sample of 20,345 students and 1,029 teachers in a national U.S. sample of 20 high schools (McDill, Meyers, & Rigsby, 1967; McDill, Rigsby & Meyers, 1969).

Brookover and colleagues have reported a study in which perceptions of school-level environment have been related to student achievement. The sample consisted of 8,078 fourth and fifth grade students, 327 teachers and 68 principals in a random sample of schools in Michigan (Brookover & Schweitzer, 1975; Brookover, Schweitzer, Schneider, Beady, Flood, & Wizenbaker, 1978). Simple correlational analysis with the school mean as the unit of analysis revealed that the magnitude of the simple correlation between achievement and an environment scale ranged from 0.01 to 0.77. In particular, student sense of Academic Futility was found to have the largest correlation with achievement.

Moos's (1981) Work Environment Scale (WES) was designed for use in any work milieu; its 10 scales are Involvement, Peer Cohesion, Staff Support, Autonomy, Task Orientation, Work Pressure, Clarity, Control, Innovation, and Physical Comfort. The actual form of the WES has now been used successfully in Australia for measuring actual school

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environment among high school teachers (Fisher & Fraser, 1983b) and for assessing both actual and preferred school environment among elementary and secondary school teachers (Fisher, Docker & Fraser, 1986). Some of the results of this research were that, in comparison with elementary school teachers, high school teachers perceived their school environment less favourably in terms of more work pressure, less clarity regarding school rules and policies, less innovation and worse physical surroundings.

Probably the most widely used instrument measuring school-level environment is Halpin and Croft's (1963) Organizational Climate Description Questionnaire (OCDQ). The final version of the OCDQ contains 64 items of four-point response format which measure teacher perceptions of four factor-analytically derived dimensions pertaining to teachers' behaviour (Disengagement, Hindrance, Esprit, Intimacy) and another four dimensions pertaining to the principal's behaviour (Aloofness, Production Emphasis, Thrust, and Consideration). Although the OCDQ was designed initially for use in elementary schools, it has been used in numerous studies at the secondary school level. The OCDQ formed the basis for the development of some new factor-analytic school environment scales by Finlayson (1973a,b) in England and by Deer (1980) in Australia for use in secondary schools. For example, Deer's instrument has two scales measuring student perception of teachers and other students (Teacher and Peer Concern for Students, Teacher and Peer Control of Students), four scales measuring teacher perceptions of the teacher group (Job Orientation, School Organization, Personal Relations, Communication), three scales measuring teacher perception of head of department behaviour (Participatory Management, Awareness, Professional Concern for Staff) and four scales measuring teacher perceptions of the school principal's behaviour (Participatory Management, Sensitivity, Professional Consideration for Staff, Personal Consideration for Staff).

School Environment Instrument

The instrument chosen as the basis for assessing teachers' perceptions of school environment in the present study was the School-Level Environment Questionnaire (SLEQ) (Rentoul & Fraser, 1983). Of the SLEQ's original eight scales, all seemed well-suited for use in the present study except Student Supportiveness (the extent to which the students behave responsibly and avoid disruptive behaviour), which appeared of limited applicability among the adult students attending the senior colleges. Consequently, the Student Supportiveness scale was eliminated and replaced by an adaptation of the Work Pressure scale from the Work Environment Scale (Moos, 1981; Fisher & Fraser, 1983b). Also some items were modified in minor ways to enhance their suitability for use in the senior college context. Whereas the SLEQ has been used previously only to assess teachers' perceptions of actual school environment, the present study also made use of a preferred form to assess the environment ideally liked or preferred by teachers.

Although research reviews show that numerous instruments measuring school environment already exist, most of these have weaknesses. In fact, according to Thomas (1976), even such widely used instruments as the OCDQ have several shortcomings. Consequently, Rentoul and Fraser (1983) developed the SLEQ to overcome weaknesses in existing instruments and to satisfy the following six criteria:

1. Consistency with literature. As several other instruments had been developed with little cognizance of relevant literature and other existing scales, the dimensions included in the SLEQ were chosen to characterize important characteristics in the school environment described in the literature and in other school environment instruments (e.g., Corwin, 1969; Halpin & Croft, 1963; Gross, Giacquinta & Bernstein, 1971). In fact, the characteristics identified included the nature of personal relationships among teachers and between teachers and students, opportunities for personal and professional development, the organizational structure (e.g., leadership, decision-making, support, and propensity for change) and the goal orientation and social structure of the school.

2. Coverage of Moos's general categories. Dimensions chosen for the SLEQ provided coverage of the three general categories of dimensions - Relationship Dimensions, Personal Development Dimensions and System Maintenance and System Change Dimensions - delineated by Moos (1974) for conceptualizing all human environments.

3. Salience to practising teachers. While the two previous criteria ensure that an instrument's dimensions are consistent with theoretical considerations, they do not give reasonable assurance that the vocabulary and content of the instrument will be salient for the majority of respondents (Young, 1980). Although many existing instruments were developed without checking their salience to teachers, extensive interviewing with practising elementary and secondary teachers ensured that the SLEQ's dimensions and individual items covered aspects of the school environment perceived to be salient.

4. Specific relevance to schools. As some existing school environment instruments are adaptations of scales designed originally for other non-school environments, their relevance to the school situation cannot be assumed. Consequently, in developing the SLEQ, only material which was specifically relevant to school was included.

5. Minimal overlap with classroom environment instruments. As classroom-level and school-level environment are confounded in a number of existing school environment instruments, the SLEQ was designed to provide a measure of school-level environment which had minimal overlap with existing measures of classroom-level environment.

6. Economy. Several existing school-environment instruments lack economy in terms of teachers' answering time, researchers' processing time or both. For example, it would take the teacher a relatively long time to complete the 30 scales contained in the College Characteristics Index, and Finlayson's (1973a) instrument is complex in that some scales are answered by teachers while others are answered by groups of students. In developing the SLEQ, an attempt was made to achieve economy by developing an instrument with a relatively small number of reliable scales, each containing a fairly small number of items.

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It was found that the above criteria could be satisfied with an instrument with eight scales. With the original Student Supportiveness scale replaced by the Work Pressure scale, the modified SLEQ contained the following dimensions: Affiliation, Professional Interest, Achievement Orientation, Formalization, Centralization, Innovativeness, Resource Adequacy and Work Pressure.

An initial pool of items was written for each scale and this was modified subsequently after receiving reactions solicited from groups of educational researchers and practising teachers. The final step involved refining scales to form a final version after the application of standard item analysis techniques to data collected from administration of the SLEQ to a sample of 83 teachers. In particular, scale internal consistency (the extent to which items in the same scale measure the same dimension) was enhanced by removing items with a low correlation with their own scale, and discriminant validity (the extent to which a given scale measures a unique dimension not measured by other scales in the same instrument) was improved by removing any item whose correlation with its a priori assigned scale was lower than that with any other scale.

The modified version of the SLEQ contains 56 items, with each of the eight scales being assessed by seven items. Table 2 further clarifies the nature of the SLEQ by providing a scale description and sample item for each scale and showing each scales's classification according to Moos's scheme. The sample items shown are for the actual form of the SLEQ, although item wording is almost identical in the SLEQ's preferred form except for use of words such as "would". For example, the item "There are always deadlines to meet" in the actual form would be changed to "There always would be deadlines to meet" in the preferred form.

Appendix A contains a complete copy of all 56 items in the modified form of the SLEQ, together with information about each item's scale allocation and scoring direction. Each item is responded to on a five-point Likert scale with the alternatives ranging from Strongly Agree to Strongly Disagree. The scoring direction is reversed for approximately half of the items. Appendix A shows that items are arranged in cyclic order so that the first, second, third, fourth, fifth, sixth, seventh and eighth item in each block measures, respectively, Affiliation, Professional Interest, Achievement Orientation, Formalization, Centralization, Innovativeness, Resource Adequacy and Work Pressure. Items whose item numbers are underlined are scored 1,2,3,4 and 5, respectively, for the responses Strongly Agree, Agree, Not Sure, Disagree and Strongly Disagree. Items without underlining are scored in the reverse manner. Ommitted or invalid responses are scored 3.

Samples

The present evaluation study involved a sample of 106 teachers from the two senior colleges. This represents over 80 per cent of the total population of teachers at these alternative high schools. As this group of 106 teachers responded to the actual and preferred versions of a school environment instrument, this design allowed an evaluation of the ethos of the senior colleges in terms of discrepancies between actual and preferred environment. As well, because data were available from a previous study in conventional high schools, it was possible to evaluate the senior colleges by comparison of their school environment with those

TABLE 2: Scale Description and Sample Item for each Scale in SLEQ

Scale Name	Description of Scale	Sample Item
Affiliation (R)	The teachers can obtain assistance, advice and encouragement and are made to feel accepted by colleagues	I feel that I could rely on my colleagues for assistance if I should need it. (+)
Professional Interest (P)	Teachers discuss professional matters, show interest in their work and seek further professional development	Teachers frequently discuss teaching methods and strategies with each other. (+)
Achievement Orientation (P)	Teachers value and expect high student achievement, and competition among students is encouraged	Students at this school are seldom under pressure to excel at academic work. (-)
Formalization (S)	Teachers are expected to comply with set rules, guidelines, and procedures and are supervised to ensure rule compliance	I am often supervised to ensure that I follow directions correctly. (+)
Centralization (S)	Decisions are made by an individual or a small group within the school	Teachers are frequently asked to participate in decisions concerning administrative policies and procedures. (-)
Innovativeness (S)	The school is in favour of planned change and experimentation and fosters classroom openness and individualization	Teachers are encouraged to be innovative in this school. (+)
Resource Adequacy (S)	Support personnel, facilities, finance, equipment and resources are suitable and adequate	The supply of equipment and resources is inadequate. (-)

.... continued

TABLE 2 (continued)

Scale Name	Description of Scale	Sample Item
Work Pressure (S)	Extent to which the press of work dominates the the job milieu	There are always deadlines to meet. (+)

Items designated (+) are scored by allocating 5, 4, 3, 2, 1, respectively, for the responses Strongly Agree, Agree, Not Sure, Disagree, Strongly Disagree. Items designated (-) are scored in the reverse manner. Omitted or invalid responses are given a score of 3.

R: Relationship dimensions in Moos's scheme; P: Personal Development dimensions; S: System Maintenance and Change dimensions

of conventional high schools. This control sample consisted of 34 teachers at the junior high school level at 34 different government high schools in New South Wales, Australia; approximately equal numbers of science and social science teachers, male and female teachers, and metropolitan and country schools were involved.

Validity of SLEQ

Validation data available for the SLEQ include information about each scale's internal consistency (Cronbach alpha reliability coefficient) and discriminant validity (mean correlation of a scale with the other seven scales). Table 3 provides these date for three separate samples. The first sample, which consisted of 83 teachers from 19 coeducational government schools (seven primary and 12 secondary) in the Sydney metropolitan area, was involved in the SLEQ's initial validation (see Rentoul & Fraser, 1983). The second sample consisted of the control group of 34 secondary school teachers described previously. The third sample consisted of the 106 teachers from the two senior colleges involved in the present study. This third sample is the only one of the three which responded to the Work Pressure scale and to both the actual and a preferred form of the SLEQ.

Table 3 shows that the alpha coefficient for different SLEQ scales ranged from 0.64 to 0.91 for the actual form for the three samples and from 0.63 to 0.81 for the preferred form for the sample which responded to this form. These values suggest that each SLEQ scale displayed satisfactory internal consistency for a scale composed of only seven items. The values of the mean correlation of a scale with the other scales shown in Table 3 range from 0.05 to 0.38 for the actual form for the three samples and from 0.12 to 0.32 for the preferred form. These values indicate satisfactory discriminant validity and suggest that the SLEQ measures distinct although somewhat overlapping aspects of school environment.

School Environment in Senior Colleges

The responses of the sample of 106 teachers from the two senior colleges provided a basis for drawing conclusions about the success of the senior colleges in their goal of cultivating a different school ethos. One way of interpreting these data involved a comparison of teachers' perceptions of actual environment with their perceptions of preferred environment on each of the SLEQ's eight dimensions. A second method of interpretation involved comparing the scores obtained on the SLEQ's actual form by senior college teachers with an available control group consisting of the 34 high school teachers (each in a different school) described previously.

Figure 2 depicts profiles representing (1) senior college teachers' perceptions of actual school environment on the eight SLEQ scales, (2) senior college teachers' perceptions of preferred school environment on the same eight scales and (3) the control group of high school teachers' perceptions of actual environment on the seven scales in the original version of the SLEQ. The profiles in Figure 2 are simplified plots of statistically significant differences in which nonsignificant differences are represented as zero differences by averaging the relevant pair of scores.

TABLE 3: Internal Consistency (Alpha Reliability) and Discriminant Validity (Mean Correlation with Other Seven Scales) for Actual and Preferred Forms of SLEQ for Three Samples

Scale	Form	Alpha Reliability			Mean Correlation with Other Scales		
		Sample A N=83	Sample B N=34	Sample C N=106	Sample A N=83	Sample B N=34	Sample C N=106
Affiliation	Actual	0.87	0.85	0.78	0.34	0.18	0.27
	Pref.			0.78			0.33
Professional Interest	Actual	0.86	0.81	0.78	0.29	0.29	0.22
	Pref.			0.79			0.37
Achievement Orientation	Actual	0.91	0.91	0.76	0.17	0.23	0.17
	Pref.			0.77			0.12
Formalization	Actual	0.73	0.68	0.64	0.31	0.05	0.17
	Pref.			0.63			0.32
Centralization	Actual	0.80	0.69	0.78	0.34	0.22	0.21
	Pref.			0.81			0.34
Innovativeness	Actual	0.84	0.78	0.68	0.38	0.22	0.27
	Pref.			0.81			0.42
Resource Adequacy	Actual	0.81	0.80	0.68	0.22	0.19	0.10
	Pref.			0.72			0.34
Work Pressure	Actual	-	-	0.74	-	-	0.16
	Pref.			0.76			0.24

Significant differences between the senior college sample and the high school comparison sample on the actual form of the SLEQ were examined initially by performing a one-way MANOVA in which the set of seven environment scales constituted the dependent variables and the type of school (senior college vs conventional high school) constituted the main effect. Because the multivariate test using Wilk's lambda criterian was statistically significant ($p<0.01$), the univariate ANOVA results were examined for each of the seven scales individually. Similarly, the comparison of the actual and preferred scores of senior college teachers on each of the eight SLEQ scales involved a one-way MANOVA, with the instrument's form (actual vs preferred) as a repeated measures factor, followed by univariate repeated measures ANOVAs for each individual scale when the multivariate test revealed significant results.

A comparison of actual and preferred profiles for the senior college sample shows that significant differences emerged for six of the eight scales. As anticipated from past research (Fraser, 1982; Moos, 1981), teachers preferred a more favourable school environment on each of the six dimensions (namely, Affiliation, Professional Interest, Centralization, Innovativeness, Resource Adequacy and Work Pressure) than the levels of those dimensions perceived as being actually present. While these differences are to be expected, it is noteworthy that there were two dimensions, namely, Achievement Orientation and Formalization, on which these expected differences between preferred and actual environment did not emerge. That is, senior college teachers perceived that the amounts of achievement orientation and formalization present at their schools were already at the desired levels, thus providing positive evidence in support of the favourable effect of the senior colleges on school ethos. It appears that, by providing a separate site for self-motivated adult learners and for teachers wishing to work with these students, the senior colleges have achieved an environment in which teachers perceive a press for student achievement and an absence of rules which teachers have to follow.

For the seven actual school environment scales for which data are available for the control group of conventional high schools, Figure 2 shows significant differences emerged on four scales. In the case of Affiliation, conventional high schools were perceived significantly more favourably than the senior colleges. This finding is not unexpected because teachers may stay at the senior colleges only for a limited time and so there would not be the same opportunity to build up personal relationships among teachers. On the other hand, the senior colleges were perceived to have significantly more favourable environments than conventional high schools in terms of the other three dimensions of Professional Interest, Achievement Orientation and Innovativeness. Furthermore, these findings are consistent with other evidence obtained from observation at the senior colleges and inverviews with teachers: the greater perceived Professional Interest could be attributed to the fact that teachers are often hand-picked for the senior colleges after newspaper advertisements; as suggested above, the greater levels of Achievement Orientation are to be expected among motivated mature-age students; and the absence of the structures and traditions of conventional high schools would facilitate Innovativeness among teachers at the senior colleges. Generally the results emerging from comparison

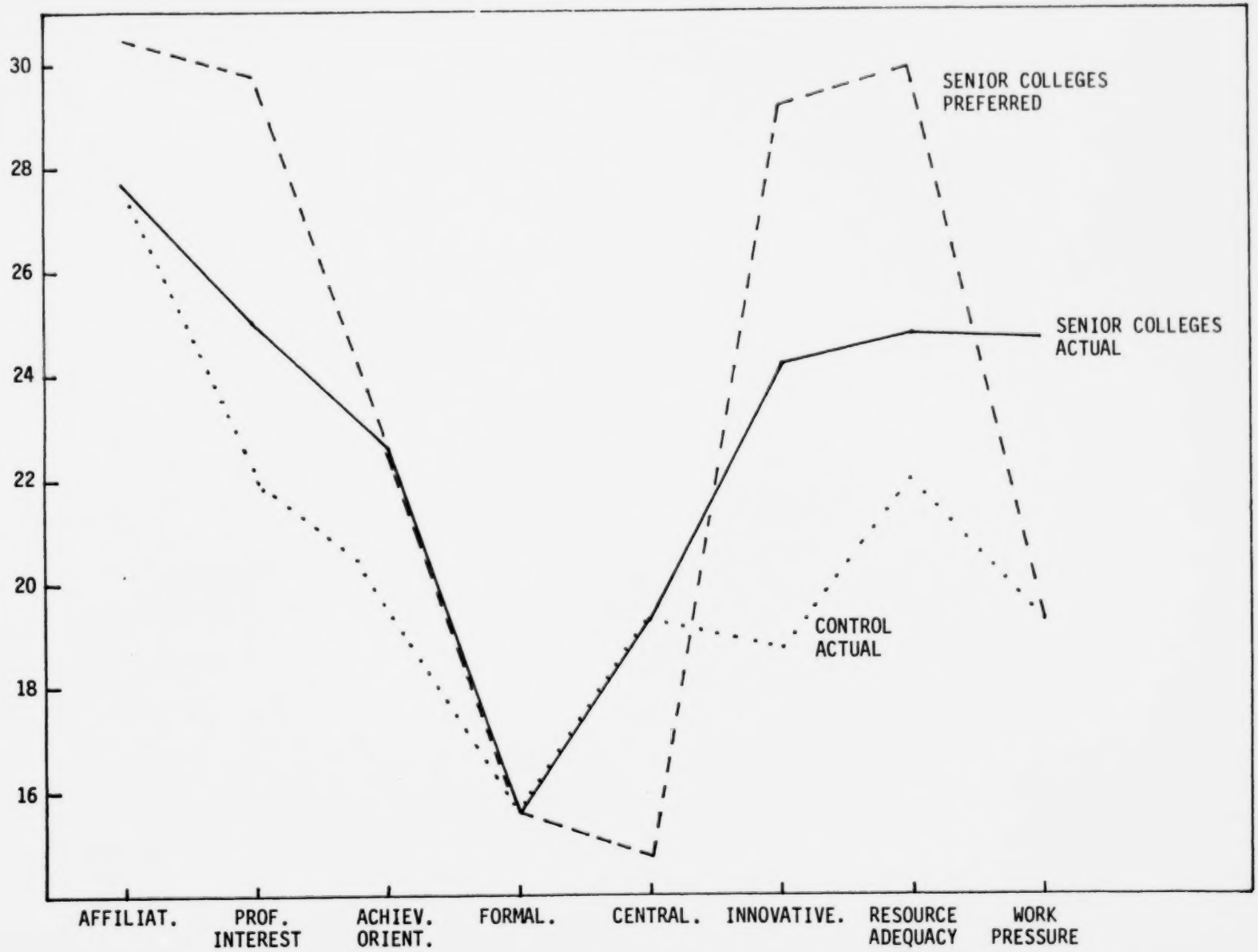

Figure 2. School Environment Profiles for Senior Colleges and a Control Group

of the actual environment of senior colleges and conventional high schools provides further evidence supporting the success of the senior colleges in promoting a favourable school ethos.

CONCLUSION

This study involved the use of measures of educational climates in evaluating some alternative high schools catering for mature-age learners. A distinctive feature of the research is that it made use of measures of both student perceptions of classroom environment (namely, the College and University Classroom Environment Inventory) and teacher perceptions of school environment (the School-Level Environment Questionnaire) within the one study. Relative to some control groups, students in the alternative high schools perceived their classes as having greater involvement, satisfaction, innovation and individualization, while teachers in the alternative schools perceived their schools are characterized by more professional interest, achievement orientation and innovativeness. If replicated in further research with other and larger control groups, the present findings would have educationally important implications about how a more favourable school ethos might be created through provision of alternative high schools.

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Appendix A

SCHOOL-LEVEL ENVIRONMENT QUESTIONNAIRE (SLEQ)

ACTUAL FORM

Directions

This questionnaire contains 56 statements about the school in which you work. You are asked your opinion about how well each statement describes what your school is actually like.

On the separate Response Sheet, indicate how well each statement describes your school by circling:

SA if you STRONGLY AGREE that your school is actually like this.

A if you AGREE that your school is actually like this.

N if you are NOT SURE that your school is actually like this.

D if you DISAGREE that your school is actually like this.

SD if you STRONGLY DISAGREE that your school is actually like this.

If you change your mind about an answer, cross out the old answer and circle the new one.

Please provide your opinion about every statement.

1. I have many friends among my colleagues at this school.
2. Teachers often have to work long hours to get their work done.
3. Teachers frequently discuss teaching methods and strategies with each other.
4. There is a great emphasis on academic achievement at this school.
5. There are few rules and regulations that I am expected to follow.
6. I have very little say in the running of the school.
7. There is a great deal of resistance to proposals for curriculum change.
8. The supply of equipment and resources is inadequate.

9. I seldom receive encouragement from colleagues.
10. The staff doesn't work too hard.
11. Many teachers attend inservice and other professional development courses.
12. At this school it is considered very important for students to do well in external examinations.
13. It is considered very important that I closely follow syllabuses and lesson plans.
14. I am encouraged to make decisions without reference to a senior member of staff.
15. It is very difficult to change anything in this school.
16. The school or department library has an adequate selection of books and periodicals.

17. I do not feel accepted by other teachers.
18. There is constant pressure to keep working.
19. Teachers show little interest in what is happening in other schools.
20. Students at this school are seldom under pressure to excel at academic work.
21. I am not expected to conform to a particular teaching style.
22. I have to refer even small matters to a senior member of staff for a final answer.
23. Teachers are encouraged to be innovative at this school.
24. Facilities are inadequate for catering for a variety of classroom activities and different size learning groups.

25. I often feel lonely and left out of things in the staffroom.
26. You can take it easy and still get your work done.
27. Teachers are keen to learn from their colleagues.
28. It is considered very important at this school for students to achieve academic success.
29. My classes are expected to use prescribed textbooks and prescribed resource materials.
30. Teachers are frequently asked to participate in decisions concerning administrative policies and procedures.
31. Most teachers like the idea of change.
32. Filmstrips, transparencies, filmloops and films are readily available and accessible.

33. I feel that I could rely on my colleagues for assistance if I should need it.
34. It is very hard to keep up with your workload.
35. Teachers avoid talking with each other about teaching and learning.
36. Preparing students for examinations is considered my principal task at this school.
37. I am allowed to make many decisions in the classroom.
38. Decisions about the running of the school are usually made by the principal or a small group of teachers.
39. New courses or curriculum materials are seldom implemented in the school.
40. Projectors for filmstrips, transparencies, filmloops and films are usually available when needed.

41. My colleagues seldom take notice of my professional views and opinions.
42. Teachers cannot afford to relax because of all the work.
43. Professional matters are seldom discussed during staff meetings.
44. At this school it is considered very important that students should reach high levels of performance in all their activities.
45. I am expected to maintain very strict control in the classroom.
46. I must ask my subject department head or senior member of staff before I do most things.
47. There is much experimentation with different teaching approaches.
48. Equipment such as recorders and cassettes are seldom available when needed.

49. I am ignored by other teachers.
50. There are always deadlines to meet.
51. Teachers show considerable interest in the professional activities of their colleagues.
52. Students are pressured to compete at this school.
53. I am often supervised to ensure that I follow directions correctly.
54. Action can usually be taken without gaining the approval of the subject department head or a senior member of staff.
55. In most classrooms in the school, students are passive listeners rather than active participants.
56. Adequate duplicating facilities and services are available to teachers.

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